Available online at www.sciencedirect.com
ScienceDirect
Journal of Forensic and Legal Medicine 15 (2008) 148–157
JOURNAL OF FORENSIC AND LEGAL MEDICINE
www.elsevier.com/jflm

Original Communication

A study of suicides in Londonderry, Northern Ireland, for the year period spanning 2000–2005

Amanda Burns, Edward Goodall, Tara Moore *

University of Ulster, Rm W1057, CMB, Cromore Road, Coleraine, Northern Ireland BT52 1SA, UK

Received 2 July 2007; accepted 2 August 2007
Available online 7 November 2007

Abstract

This study reports on 60 cases of suicide in Londonderry, Northern Ireland from January 2000 to December 2005. The research focused on a number of factors associated with the occurrence of suicide. These included age, gender, employment status, method used and possible predisposing factors. Additionally, the seasonality of occurrence was also investigated. Notably, over the period of the study, the number of suicides almost doubled. The results demonstrated that 83.3% of suicides were male. The largest proportion of these, over one third, occurred in men between the ages 21 and 30 years. This high rate of young male suicides was in marked contrast to any other group. The most frequent method of suicide recorded in this study was hanging (55%). The next most frequent methods were drowning (25%) and overdose (13.3%). Three times as many males (6) overdosed compared to females.

Keywords: Suicide; Epidemiological data; Northern Ireland; Londonderry; Official statistics

1. Introduction

Suicide is a major social problem with tragic implications for all sections of society, especially the affected family. Thus, it is important to identify the contributing factors and to establish strategies for the promotion of positive mental health throughout communities at all levels. A prerequisite for such initiatives is the collection and analysis of accurate epidemiological data specific to the causes of suicide.

Gunnell and Frankel[1] reported suicide as the third largest cause of "years of lives lost", following cardiovascular disease and cancer. A report from the Department of Health and Social Services and Public Safety[2] recognised suicide as an international problem. It highlighted that the suicide rate in Northern Ireland was higher than in England and Wales, but lower than that of Scotland and the Republic of Ireland. In addition, it also identified upward trends in its analysis of suicides in Northern Ireland. Notably, the male suicide rate steadily increased over the late 1990s and early 2000s, whereas the female suicide rate remained fairly constant. The most frequent age group for suicide was found to be 25–34 years. The Section 75 analysis of suicide and self-harm in Northern Ireland (2000–2005)[3] estimated that, between 1999 and 2003, the average suicide rate was 9.8/100,000 people and that over these 5 years, the male suicide rate had increased from 14.1/100,000 to 15.9/100,000 people whereas the female suicide rate had remained relatively constant at 4/100,000 people.

The data analysed and presented in this manuscript relates specifically to 60 cases of suicide that occurred within Londonderry in Northern Ireland over the period if January 2000–December 2005.

Londonderry is a city in Northern Ireland, often also referred to as "Derry" and the "Maiden City". The old walled city of Londonderry lies on the west bank of the River Foyle. The present city now covers both banks, the

* Corresponding author. Tel.: +44 0 7793226873; fax: +44 0 2870324375.
E-mail address: t.moore@ulster.ac.uk (T. Moore).

1752-928X/$ - see front matter
doi:10.1016/j.jflm.2007.08.002

Cityside to the west and the Waterside to the east, interconnected by two bridges. The district is administered by Derry City Council. The areas included within the latter have a population of 105,066 (Census 2001).[4] The River Foyle flows from the confluence of the Rivers Finn and Mourne at Strabane, County Tyrone, to Londonderry, where it discharges into Lough Foyle and ultimately the Atlantic Ocean. The deep fast moving river and the presence of two bridges make it a frequent choice as a method of attempting to commit suicide. A local organisation, "Foyle Search and Rescue", was established in 1993, with the role of attempting to protect human life in the River Foyle, from the Craigavon Bridge to the Foyle Bridge. A local campus, Magee, is part of the University of Ulster and there is also a local airport, City of Derry Airport. Much of the traditional economy has been based on the textile industry. However, more recently, International Industrial Firms have provided additional employment within the area.

2. Methods

This research was conducted in accordance with all University of Ulster Research Governance and Ethical Policies. The project was assessed and passed by the local Research Ethics Committee.

The data presented in this manuscript were obtained by the examination of Form 19s, and by the examination of contemporaneous notes made by Forensic Medical Officer (FMO) in attendance at the scene of suicides. The Form 19 is completed by the Investigating Police Officer (IO) in attendance at the scene of all sudden unexplained deaths.

Following a sudden unexplained death such as a suicide, the IO sends a Form 19 and accompanying witness statements to the coroner. A post-mortem report is sent by the pathologist to the coroner and the latter will provide a copy of this report to the IO.

In Northern Ireland, the holding of an inquest is discretionary, with the exception of the death of a prisoner. The holding of inquests into suicidal deaths used to be a normal procedure. However, from the year 2000, families are given a choice, providing there is clear evidence that the death is suicidal. This change was largely due to the implementation of the Human Rights Act 1998 into domestic legislation on 2/10/00. Article 8 of the European Convention of Human Rights provides for respect for a person's private and family life. Very few families wish for an inquest when such circumstances occur.

A psychological autopsy was then performed in order to attain more information relating to the psychiatric history of the victims and to search for stated intent by the victims that they were going to commit suicide. The psychological autopsy in this study is limited to further examination of the Form 19s and FMO contemporaneous notes. Initially, the latter were examined for indications of the person's state of mind before committing suicide. Using the same classification used in the Kildare study,[5] the state of mind of each of the 60 suicide cases in this study was recorded. The classification categorised the state of mind of the person before committing suicide as follows: unknown, a possible history of mental illness, suffering from depression or a current psychiatric patient at the time of death. A person would only be recorded as suffering from depression if this had been diagnosed by a doctor. A person would be recorded as possible history of mental illness if it had been recorded for example that a relative or friend had thought that they had been "feeling a bit down" although a diagnosis of depression had never been made by a doctor.

The Form 19s and FMO contemporaneous notes were then further examined for stated intent by the victim that they intended to commit suicide. Stated intent was recorded as being verbal, or as written, in the form of a suicide note or text message.

The objective of this study was to identify particular trends or patterns which may be helpful in the formulation of local suicide prevention strategies. A statistical analysis was performed on suicide data for the Londonderry area over the period of January 2000–December 2005. The data were statistically analysed and findings were compared with those from a similar study in Kildare, from 1995 to 2002 by McGovern et al.[5] For the purposes of direct comparison, the data were analysed using the same statistical methods as those used in the Kildare study.

3. Results and discussion

The results of this study, demonstrated 83.3% of suicides were male, 17 of which were men between the ages of 21–30 years. The average number of suicides in Londonderry, over the period of January 2000–December 2005, was 10 suicides/annum, with a calculated average suicide rate of 9.4/100,000 population. The most frequently chosen method of suicide was hanging (55%).

Initially, the gender and age data were analysed in different ways in order to provide an overall view of the deaths that were occurring in a particular age group. In this study, of the 60 cases of suicide that occurred over the 6-year period assessed, 83.3% were male (see Fig. 1). As shown in Fig. 2, the high rate of young male suicides in Londonderry

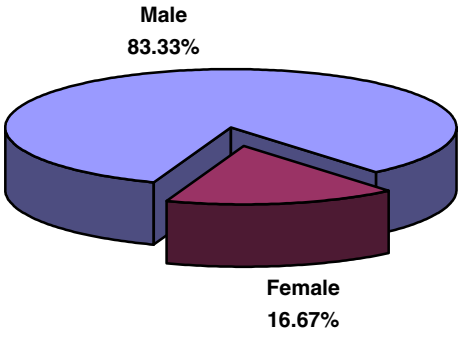

Fig. 1. Male and female suicide rates for Londonderry area over the 6 year time period studied.

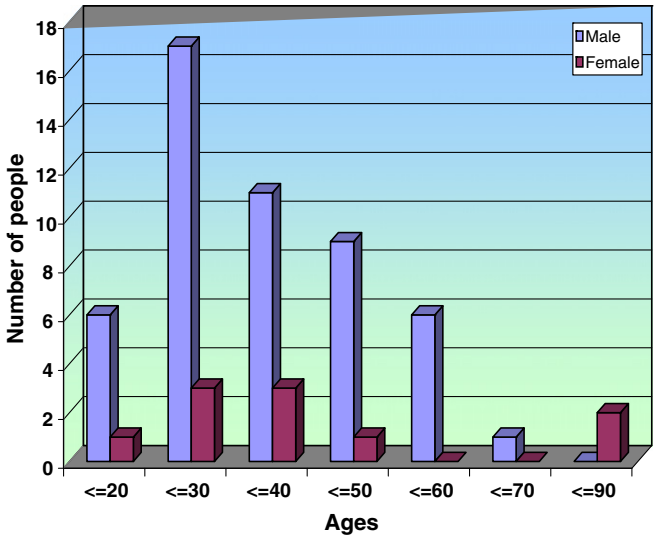

Fig. 2. Suicide victim age by gender.

is in marked contrast to any other age group. When the data from Fig. 2 is presented as a combined gender chart (Fig. 3), it illustrates clearly the high suicide rate in the age group ⩽30 years. The youngest suicide recorded in this study was that of a 13 year old and there were only 3 out of 60 recorded suicides (5%), in the age group over 60 years.

This trend of an increase in suicide rates in young males is one which has been identified not only in Ireland and the United Kingdom, but in several European countries including Portugal, Spain and Greece,[6] and in other countries including New Zealand.[7] Given the relative stability of suicide rates in young females, one must question why the suicide rate has increased in young males? Hawton[8] states "my personal belief is that the most likely explanation for the increase in suicide rates in young males lies in social changes, particularly in terms of perceived or actual reduction in role opportunities, which have differentially affected the relative vulnerability of males and females to emotional difficulties; compounded by hopelessness, particularly in response to other stress factors such as unemployment and broken relationships, with substance abuse and difficulty in help-seeking being additional contributory factors." Bowers[9] suggests a link between changing gender roles and suicide rates, with women having better coping skills than men, for the challenges in life. The Barnardos report[10] on youth suicide in 1999 highlighted the high demands and responsibilities placed on young men by society, and suggested the requirement of encouragement for young men to express themselves emotionally.

When considering any suggested explanations, it is obvious that the explanatory factors must have either occurred to different extents with males and females, or else have had differing effects.

On average, as demonstrated in Fig. 4, over the time period studied, there was an average of 10 deaths due to suicide per annum in Londonderry. Using the NISRA mid-year population estimates for Northern Ireland,[11] the average estimated population in Londonderry, for the period of the study, 2000–2005 was calculated to be 106,421. These estimates were calculated from the Census 2001 by taking into consideration births, deaths and migration numbers. Using the latter estimate, the average annual suicide rate in Londonderry over the years of this study was found to be 9.4 per 100,000 population. The official number of suicides registered in Londonderry, as recorded by NISRA,[12] for the period of the study 2000–2005, was 59, giving an average annual suicide rate of 9.2 per 100,000 population. The official number of suicides registered in Northern Ireland, as recorded by NISRA,[12] for the period of the study 2000–2005, was 1029, giving an average of 172 deaths due to suicide per annum and an average annual suicide rate of 10.1 per 100,000 population. This would imply relative accuracy, on comparing the results in this study with the officially recorded results by NISRA for

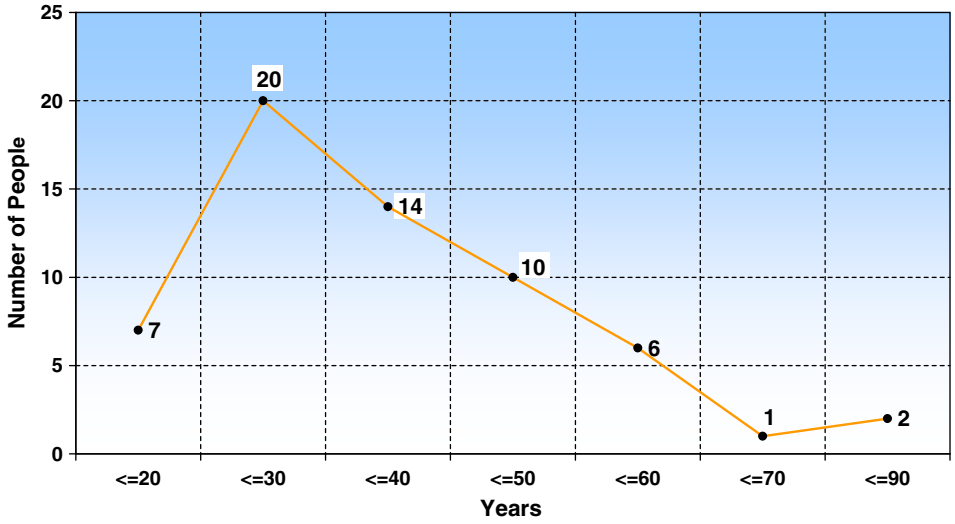

Fig. 3. Range of ages of suicide victims for Londonderry area over the 6 year time period studied.

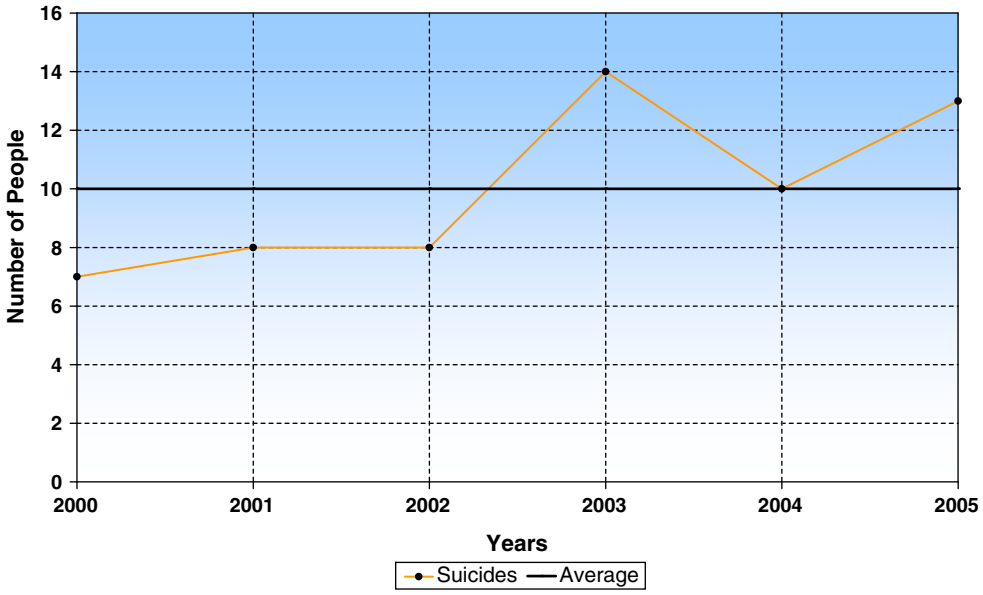

Fig. 4. Suicide rate per annum for Londonderry area for 2000–2005.

the period of the study, 2000–2005 in Londonderry. It would also suggest, that the suicides in Londonderry follow the same trends as those in Northern Ireland as a whole. The statistics recorded by the Demography and Methodology Branch (DMB) within the Northern Ireland Statistics and Research Agency (NISRA) are compiled from information on the death certificates. However, when considering suicide events it includes cases where the cause of death is classified as either "suicide and self-inflicted injury" or "event of Undetermined Intent". Also, it records these vital events relating to the registration of the death rather than the date of death occurrence. Thus, this divergence explains possible problems with inaccuracies when recording such statistical data.

The different methods of suicide used within the Londonderry area were examined and are reported in Fig. 5. The most frequent method of suicide was hanging, at 55%. The next most frequent methods were drowning, at 25% and overdose at 13.33%. Other recorded methods were less frequent such as gunshot 3.33%, carbon monoxide poisoning 1.67% and inhalation 1.67%. There are various factors which can independently or, in combination, influence the method of suicide employed by a victim.[13] These factors include accessibility and availability; knowledge, experience and familiarity; meaning, symbolism and cultural significance and state of mind.

In this study, hanging was shown to be the most frequent method of suicide used in both sexes. Of the 60 cases of suicide (50 male, 10 female) 54% of males and 60% of females used hanging as the method of suicide. The most frequent age group that used hanging as the method of suicide was 20–29 years, for both genders. Wilkinson et al.[14] conducted an analysis of suicide mortality data for Australia and England and Wales (1968–1997), to compare trends

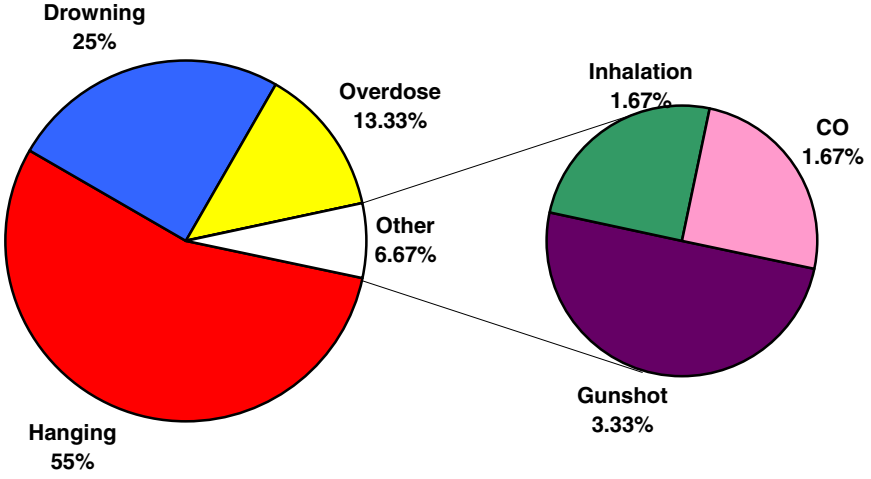

Fig. 5. Diagrammatic representation of suicide methods.

in method-specific suicide rates, in victims aged 15–34 years. A marked increase in suicides by hanging was demonstrated in Australia and in England and Wales and hanging was shown to be the most frequent method of suicide in males. Kposowa et al.[15] investigated whether women used less lethal methods for committing suicide than men in Riverside County, 1998–2001 and demonstrated no sex differentials in hanging. However, traditionally, methods of suicide have differed between genders, females choosing less violent methods such as drugs and carbon monoxide and males favouring hanging and shooting.[16] Prevention of hanging is obviously a problem, since it is a readily available method and one which is used so frequently by both sexes.

In this study, drowning accounted for 25% of all suicidal deaths. Of the 60 cases of suicide (50 male, 10 female), 26% males and 20% females used drowning as the method of suicide. Approximately 300 suicidal drownings occur annually in England and Wales.[17] The accessibility to water is thought to be an important factor influencing the choice of ''drowning'' as a chosen method of suicide, with areas near the sea or lakes having higher drowning suicide rates.[18] As already mentioned, the River Foyle is readily accessible by 2 bridges and is the second most frequently used method of suicide in Londonderry. The problem of miscoding, in death by drowning, has been well recognised in many previous studies. A study by Cullen et al.[19] on suicides in rural Ireland, demonstrated drowning to be the most frequent method of suicide for both sexes in County Mayo. However, the suicide rate in their study was higher than official published statistics, and the authors recognised the greatest miscoding was of death by drowning. Another study by Salib et al.[20] on suicides by drowning, 1979–2001, in England and Wales, recognised that the trend of a reduction in suicides as a result of drowning was not evident in the elderly age group. It also highlighted that the elderly age group, especially females, were more likely to have a verdict of ''suicide by drowning'' as opposed to ''undetermined'' than the younger population. The high rate of deaths by drowning recorded as ''undetermined'' highlights the problem of under reporting and over reporting leading to misclassification.

Suicide by administration of a poisonous substance includes overdose of a pharmaceutical product and deliberate ingestion of substances such as industrial or household poisons. In this study, 8 of the 60 cases (13.33%) used overdose as the method of committing suicide. This included 6 of the male cases (12%) and 2 of the female cases (20%). A study by Henderson et al.[21] and a study by the Home Office[17] demonstrated overdose to be the principle mode of suicide in females. Gunnell et al.[22] carried out a study to identify any relationship between the availability of paracetamol in over-the-counter sales and overdoses of a fatal and non-fatal nature. Their study included individuals over the age of 15 years in England and Wales and in France from 1974 to 1993. In France, where the quantity of paracetamol sold in a single purchase is limited, paracetamol overdoses of a fatal and non-fatal nature were less of a problem. New legislation was introduced in September 1998 to reduce the number of tablets available in over-the-counter-sales. Hawton[23] reviewed the legislation and the impact it had on morbidity and mortality as a result of overdoses with analgesics. Initial positive benefits were reported. Hawton et al.[24] evaluated the long-term effects of a reduction in the pack size of analgesic tablets sold over-the-counter, in England and Scotland from September 1993 to September 2002. Results demonstrated that there was a 22% reduction in suicides from paracetamol and salicylate overdose in the year following the change in legislation in September 1998. This change was sustained for the subsequent two years.

In this study, one would have expected a higher percentage of female suicides to have been as a result of overdose. Instead, when viewing the methods of female suicide, 60% were due to hanging, 20% drowning and 20% overdose. The 1998 legislation relating to the reduced number of paracetamol available in over-the-counter sales may have attributed to this finding.

Hendin[25] in his book ''Suicide in America'', stated ''A particular method may serve as a form of communication of both personal and social needs. The method many people chose is not only their last message, but a climactic gesture that also expresses how they lived and how they hoped to resolve the conflicts that plagued them in life''.

Psychological autopsy has been the cornerstone of much suicide research and the process has been compared to a post mortem examination.[26] A complete psychological autopsy would involve detailed interviews with family and friends, interviews with general practitioners, psychiatrists and other mental health professionals and also access to medical records.

As shown in Fig. 6, in this study, the victim's state of mind was unknown in 41.7% of cases, the victim had been previously diagnosed with depression in 41.7% of cases, there was a possible history of mental health problems in 11.7% of cases and the victim had been a current psychiatric patient in 5% of cases. This indicates that a significant number of victims had realised that they had mental health problems and had taken the step to consult their doctor. With these victims, depression had been diagnosed and certainly some of these victims would have been on antidepressants. Prescribed medication was not considered in the data collected in this study. Although some of these victims will have been on treatment, obviously their GPs had not been aware of the suicidal risks and they had not been referred for further psychiatric care. The Northern Ireland Suicide Study by Foster et al.[27] provides evidence of a strong link between suicide and mental disorder, demonstrating that 90% of suicides had a current axis I and/or an axis II mental disorder.

Within this study, out of the 60 cases, 7 left suicide notes (11.7%), 2 verbally informed family members that they intended to commit suicide (3.3%), 1 verbally informed police that they intended to commit suicide (1.7%) and 1

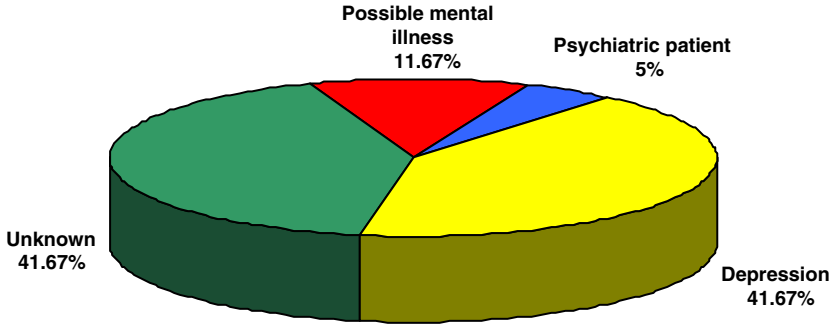

Fig. 6. Psychiatric histories of victims of suicide for Londonderry area over the 6 year time period studied.

sent text messages confirming their intentions to family members/friends (1.7%). There was no recorded stated intent, with the 49 remaining cases (81.7%). The 11 cases with recorded stated intent were all male, except for 1 female who had left a suicide note. Of these 11 cases of recorded stated intent, 6 had used hanging and 5 had used drowning, as a method of committing suicide. It was not possible to record the content of the suicide notes in all of the recorded cases. However, one of the recorded suicide notes had stated "I have to get away from all of this". One of the victims had left 3 suicide notes to different family members/friends. The victim, who had made a phone call to police, had informed them of an intention to jump from the bridge into the River Foyle. The victim that had sent text messages to family/friends had stated "I will see you in heaven". The age group $\leqslant$30 years accounted for 54.5% of these cases with recorded stated intent. An analysis of 40 suicide notes by Bhatia et al.[28] reported that 55% of notes were written by victims between 21 and 30 years of age and 65% of the suicide notes were written by male victims. A study by Peck[29] demonstrated a low association between intent, as indicated by written statements, and choice of suicide method.

The association between suicide and unemployment was analysed and the results are shown in Table 1. This table illustrated that 29 out of the 60 cases of suicide had been unemployed (48.3%). Of these 29 unemployed victims, 25 were male and 4 were female. A study by Inoue et al.[30] demonstrated a significant correlation between total annual suicide rates and unemployment rates in Japan from 1985 to 2002. There was a significant correlation between male annual suicide rates and unemployment rates, but not with female rates. The authors concluded that suicide risk increases among men in Japan who lose their jobs. According to Cheng et al,[31] unemployment was the strongest correlate of suicide rates in Japan from 1985 to 2000. Suggestions have been made that the impact of unemployment may differ between sexes.[8] The self-esteem and social standing of males and its effects on their families and domestic circumstances may be more dependent on employment status than for young females. An analysis by Gunnell et al.[32] of trends in England and Wales from 1921 to 1995 identified significant associations between unemployment and suicide in both sexes. This finding is also reflected in this study, with unemployment status accounting for 40% of all female suicide victims and 50% of all male suicide victims.

The day and month of suicide occurrence was then analysed to identify any trends. Fig. 7 illustrates the day of the week analysis and Fig. 8 the month of the year analysis. Fig. 7 illustrates that 23 out of the 60 cases of suicide (38.33%) occurred over the weekend days, Saturday and Sunday. A study by Bradvik,[33] on 1206 psychiatric inpatients with severe depression was conducted in Sweden from 1956–1969. The aim was to identify any specific trends in suicide relating to months of the year and days of the week. Follow up in 1998 revealed that 114 out of the 1206 inpatients had committed suicide. Results demonstrated that 31% of all suicides occurred on Sundays. Some previous studies have associated other factors, such as

Table 1
The employment situation at the time of death

Apprentice painter	1	Foreman	1	Retired electrician	1
Area manager	1	HM forces	1	Schoolboy	1
Auxiliary nurse	1	Kitchen assistant	1	Shop assistant	3
Carpenter	1	Labourer	1	Social worker	1
Chef	1	Maintenance	1	Student	3
Clerical worker	1	Mechanic	2	Theatre nurse	1
Community worker	1	Painter	1	Unemployed	29
Electrician	1	Process operator	1	Voluntary worker	1
Employed	1	Retired civil servant	1	Waitress	1

The association between suicide and unemployment was analysed and the results are shown in this Table. This data illustrated that 29 out of the 60 cases of suicide had been unemployed (48.3%).

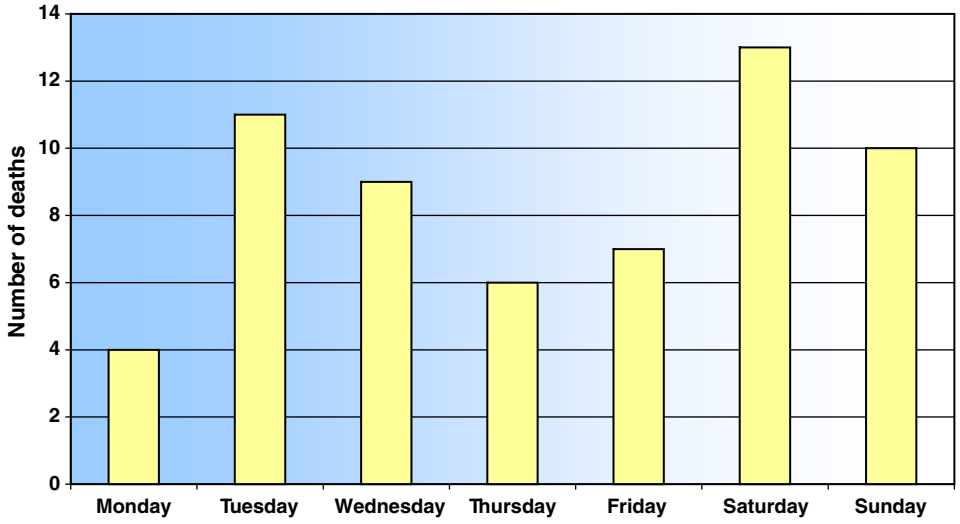

Fig. 7. Day of week suicide occurred within Londonderry area over the 6 year time period studied.

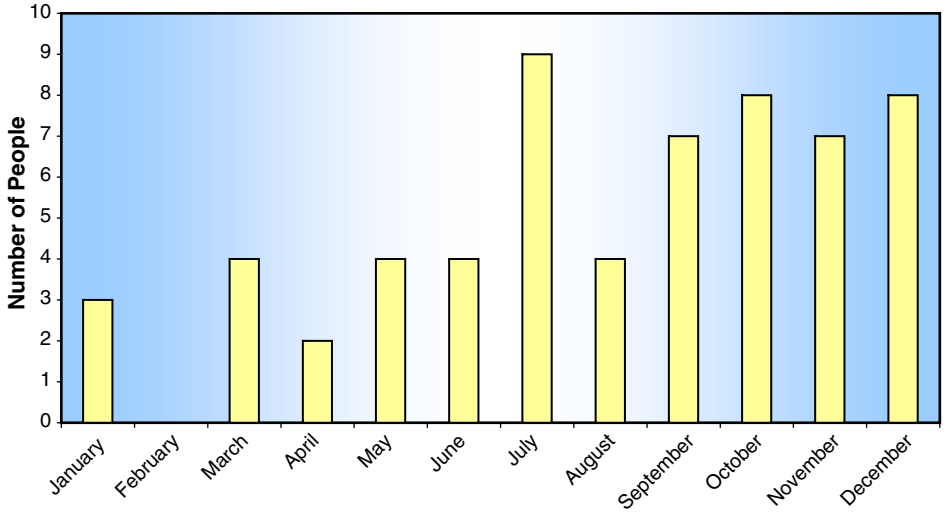

Fig. 8. Suicide rate per month.

employment status, as an influence on whether suicide is committed on a weekday or a weekend. One such study by Pirkola et al.[34] investigated how the employment status influenced the weekly patterns of suicide among alcohol misusers. They demonstrated that among alcohol misusers, those in employment were significantly more likely to have committed suicide during the weekend (52%) than those who were unemployed (34%). The authors suggested that a weekly pattern of weekend drinking, in alcohol misusers who were employed, might be a possible explanation for clustering of suicides at the weekend. If this was the case, it was also suggested, that alcohol consumption might be a contributory factor to the suicidal act. Results from the Londonderry study did not consider any data relating to a history of alcohol misuse or toxicology results at post-mortem. Of the 23 suicide cases which took place at the weekend, 39.13% were employed. However, it is not possible in this study, to relate weekly patterns of suicide to alcohol habits. Another study by Weinberg et al.[35] among Israel Defence Force soldiers, demonstrated a 60% increase in suicide rate on the first working day, following the weekend. This again considers employment status as a cofactor influencing what day of the week someone chooses to commit suicide.

Fig. 8 illustrates a peak in the number of suicides occurring during the month of July, and a cluster occurring during the months September–December. Interestingly, there were no suicides recorded during the month of February. The study by Bradvik,[33] demonstrated that 41% of all male suicides occurred during October and November. Other studies relating to seasonal patterns of suicide have demonstrated summer peaks and winter troughs.[36] Some other studies have considered the role of additional factors in co-influencing seasonal trends. A study by Preti et al.[37] highlighted that the age and sex of the victim had co-influences with seasonal trends and that more definite patterns

of seasonal variation were associated with the more violent methods of suicide.

Comparisons were then made between this study and the Kildare study.[5] The Kildare study was an 8-year study spanning 1995–2002 and included 109 suicide cases. The method of data collection in the Kildare study differed from this study. The data in their study was obtained by examining the records of the Kildare County Coroner. When the Kildare study made comparisons to official recorded statistics in Kildare, it explained that the Central Statistics Office (CSO) uses the Form 104 to obtain data. The Form 104 asks the investigating Police officer to give an opinion on the cause of death and would be comparable to the Form 19 used for data collection in this study. When gender and age data were analysed in the Kildare study, results demonstrated 84% of deaths were male (83.3% in this study). Both studies demonstrated a clear trend of young males $\leqslant$30 years, accounting for the highest number of suicides. When statistics were illustrated using a combined gender chart, the same age group clearly accounted for the highest number of suicides in both studies. The youngest suicide recorded in the Kildare study was an 11 year old (13 years old in this study). The Kildare study had 23/109 suicide cases over the age of 60 years (21.1%), whereas this study only had 5% of cases in this age group, suggesting that suicide in the elderly population is less of a problem in Londonderry. The Kildare study demonstrated an average of 14 deaths due to suicide per annum in Kildare, with a calculated average annual suicide rate of 10 per 100,000 population. (In this study there were an average of 10 deaths due to suicide per annum in Londonderry, with a calculated average annual suicide rate of 9.2/100,000 population). This data would indicate similar suicide trends in the two regions in the North and South of Ireland.

Suicide method analysis demonstrated hanging to be the most frequently used method in both studies (49% Kildare study, 55% this study). Shooting was the second most popular method used in the Kildare study (17%), whilst it only accounted for 3.33% of cases in this study. Drowning accounted for 11% of cases in the Kildare study, but was the second most frequent method chosen in this study (25%). Overdose only accounted for 4% of cases in the Kildare study, however in this study it accounted for 13.33% of cases. These trends would tend to suggest greater availability/access to guns in Kildare. Strangely, there are two canals and the River Liffey running through Kildare, however despite this availability, drowning was much less frequently used than shooting. The authors commented that they had expected a significantly higher percentage for suicides by overdose. They also suggest these results indicate that the new regulations relating to the control of paracetamol, brought into force in October 2001, have been a success.

Following psychological autopsy, comparisons were made with psychiatric history of victims, and stated intent. In both studies, the psychiatric history of a significant number of the victims was unknown (Kildare study: 42% unknown, this study: 41.7% unknown). Diagnosed depression was present in 21% of cases in the Kildare study compared with 41.7% of cases in this study. In the Kildare study, 17% were psychiatric patients, whilst in this study only 5%. The remainder were recorded as having a possible psychiatric history.

In the Kildare study, the authors state that in the vast majority of cases, where there had been stated intent from the person that they were going to commit suicide, this was in the form of a suicide note. Out of all cases, 35% of victims left a suicide note. They refer to a few cases where more than one note was left, and they mention that in all cases except one, the notes had been handwritten. They also refer to two cases where the letters were almost illegible, presumably due to the distress of the writer, and one unusual case, where the note had been written by someone else, because the person couldn't read or write. They do not mention any other methods of stated intent, such as those referred to in this study, verbally telling family/friends/police or sending text messages. When employment status was analysed, unemployment was the largest category in both studies, with 25/109 victims in the Kildare study and 29/60 cases in this study. Of the unemployed victims, only 5 were female in the Kildare study and 4 in this study.

Finally, when the most frequent day of the week and month of the year chosen by suicide victims was analysed to look for trends, the results of the Kildare study demonstrated the greatest number of suicides occurred on Mondays. The authors calculated 52% of suicides had occurred on Saturday, Sunday or Mondays. In comparison, the greatest number of suicides in this study occurred on Saturdays, with relatively few occurring on Mondays. The Kildare study demonstrated a clear trend of summer suicides, the authors calculated 32% occurred during the summer months of May, June and July. The authors commented that this finding was contrary to their expectation that suicides would be more frequent in the darker winter months. Although the greatest number of suicides in this study occurred in July, this was followed with a cluster of suicides over the winter months from September until December. The July peak was not statistically significant. However, it would prove of value to investigate whether such a peak occurred consistently throughout the rest of the North of Ireland.

4. Conclusions

Subsequent to the analysis of suicide data for the period of 2000–2005, in Londonderry, it has become clear that a very real problem exists with respect to suicides in the young male subpopulation. In order to attempt to tackle this problem, preventative actions need to be developed. Subpopulations, which are particularly at risk, must be targeted with a multi-agency approach and the general population must be educated. Strategies such as school-based educational suicide-prevention programmes should also be considered. The Investing for Health Strategy has recog-

nised the importance of addressing the issue of suicide and attempted suicide in Northern Ireland, especially targeting the young male population. The 5-year Promoting Mental Health Strategy and Action Plan 2003–2008[38] aims to prevent and reduce the number of suicides in Northern Ireland by an interagency approach. These plans include interventions such as suicide awareness training for teachers and youth leaders, outreach work in areas of need, suicide awareness programmes, support and information services for those bereaved by suicide, suicide risk training programmes and depression awareness training programmes.

A very recent spate of suicides in Londonderry, closely followed by a cluster of suicide attempts, all within the young male age group, has caused great concern within local communities. The Western Health and Social Services are presently examining possible ways to support these vulnerable people and a subgroup has been set up to identify and target these young people and establish strategies to help them.

In order to prevent suicide, an understanding as to why suicides are occurring must be developed and since the underlying aetiology is multifactorial, preventative measures will be complex and difficult to establish.

An interesting theory on suicide is presented by Professor Thomas Joiner.[39] He states "There's an idea that suicide is a mode of death that stands apart from the others, but there are clear reasons why people die by suicide. Just like heart disease, if you understand it, you can prevent it." His theory is that the combination of two psychological states – (a perception of being a burden to others and believing that one no longer has positive contributions to make in life and a feeling of social disconnection and isolation), with an acquired ability to enact self-injury, lead to suicide. He believes that these victims learn to overcome the instinct for self-preservation. Professor Joiner said "Some people think that those who commit suicide are weak. It's actually about fearlessness. You cannot do it unless you are fearless, and this is behaviour that is learnt. The truth may be unsettling – it is about fearless endurance of a certain type of pain. Perhaps this will demystify and destigmatise suicide and perhaps even the mental disorders associated with it." He describes how victims can "work up" to the suicidal act by getting used to danger, fear and pain by various methods such as engaging in reckless behaviour and repeated suicide attempts.

Critics have thought that this theory overreaches, in attempting to establish a theory that fits all suicide scenarios. Certainly there are openings for further suicide research to either disprove or agree with Joiner's theory. Of course, a theory that would fit all suicides would be an extremely useful tool in establishing suicide links and in identifying vulnerable potential suicides which might be preventable.

A suicide crisis has been identified within the young male population in Northern Ireland over the last decade and the findings following the collection and analysis of data in Londonderry, from 2000 to 2005 have reflected a similar crisis. The problems burdening young males may on some occasions be trivial, however they are often perceived by them as being major. It is therefore important for family and friends to be on their guard for any indications that such problems exist. In this day and age, social hardships pose problems for young men. Rising unemployment rates and divorce rates, and an increase in alcohol and drug abuse are certainly important factors contributing to the risk of suicide. However, the state of mind of these young men is also extremely important. Many suicides are triggered by a depressive episode and a significant number are caused by severe mental illness. Therefore, there is great importance attached to the identification and prevention of such mental health problems.

In light of the current era of world wide web access and the availability online of not only drugs to facilitate suicide but also advice on all methods of suicide and conversing with those of like intent, attention will need to focus on the incidence of Internet assisted suicide in the future. Additionally, increased pressure should be placed on Internet providers to control or ban the provision of sites that support and encourage suicide in vulnerable males and females.

Many victims contact their General Practitioner in the few months preceding suicide, providing obvious opportunities to prevent at least some of these suicides. There is a stigma of disapproval attached to suicidal behaviour and the subject is therefore not often discussed. In general, males are less likely than females to ventilate about their emotions, concerns or worries and are less likely to seek help. Stresses and strains therefore accumulate over a period of time and often the trigger leading to the suicidal act can be something relatively trivial. Hence the old saying "the straw that broke the camel's back." When trying to understand the reasons why someone committed suicide, it is essential to view the whole picture of events, not simply the precipitating factor which may appear to have led to the suicidal act. This is often a concept which families struggle with, when trying to understand exactly why their loved one has committed suicide.

This research appears to substantiate strongly the need for additional professional support services for those contemplating suicide. Policy makers should also consider the establishment of a national database on suicide incidence in order to elucidate further the reasons and monitor the efficacy of control strategies for the prevention of this major social problem.

References

1. Gunnell D, Frankel S. Prevention of suicide: aspirations and evidence. *BMJ: Brit Med J* 1994;**308**(6938):1227–33.
2. Department of Health and Social Services and Public Safety: Information Analysis Directorate. Draft Suicide Prevention Strategy: Protect Life-A Shared Vision. 21/6/06, 2006. p. 1–100.
3. Department of Health and Social Services and Public Safety: Information Analysis Directorate. Section 75 Analysis of Suicide and self harm in Northern Ireland (2000–2005). 21/6/06, 2006. p. 1–57.
4. Northern Ireland Statistics and Research Agency. http://www.nisra-new.nisra.gov.uk/Census/Excel/KS01W.xls. 2001.

5. McGovern C, Cusack DA. A study of suicides in Kildare, 1995–2002. *J Clin Foren Med* 2004;**11**(6):289–98.
6. Pritchard C. Is there a link between suicide in young men and unemployment? *Brit J Psych* 1992;**160**:750–6.
7. Skegg K, Cox B. Suicide in New Zealand 1957–1986:the influence of age, period and birth-cohort. *Aust New Zealand J Psych* 1991;**25**: 181–90.
8. Hawton K. Why has suicide increased in young males? *Crisis* 1998;**19**(3):119–24.
9. Bowers F. *Suicide in Ireland*.
10. Barnardos. Responding to youth suicide and attempted youth suicide in Ireland. Policy Briefing 1, 1999.
11. Northern Ireland Statistics and Research Agency. http://www.nisra.gov.uk/demography/default.asp?cmsid=20_21_24&cms=demography_population%20statistics_Mid%2Dyear+population+estimates&release.
12. Northern Ireland Statistics and Research Agency. http://www.nisra.gov.uk/demography/default.asp?cmsid=20_45_100&cms=demography_Publications_Registrar+General+Annual+Reports&release.
13. Berman AL, Bergeron CE. Forensic psychiatry and forensic psychology. In: Jason Payne-James, editor. *Suicide Predictors and Statistics. Encyclopedia of Forensic and Legal Medicine*. Oxford: Elsevier; 2005. p. 378–88.
14. Wilkinson D, Gunnell D. Comparison of trends in method-specific suicide rates in Australia and England and Wales, 1968–97. *Aust NZJ Public Health* 2000;**24**(2):153–7.
15. Kposowa AJ, McElvain JP. Gender, place, and method of suicide. *Soc Psych Psych Epid* 2006;**41**(6):435–43.
16. Denning DG, Conwell Y, King D, Cox C. Method choice, intent, and gender in completed suicide. *Suicide Life-Threat Behav* 2000;**30**(3): 282–8. Fal.
17. HMSO Stationary Office. *Mortality statistics: causes; England and Wales*. London: Office for National Statistics; 1998.
18. Auer A. Suicide by drowning in Uusimaa province in southern Finland. *Med Sci Law* 1990;**30**(2):175–9.
19. Cullen A, Connolly JF. Aspects of suicide in rural Ireland 1978–1994. *Arch Suicide Res* 1997;**3**(1):43–52.
20. Salib E. Trends in suicide by drowning in the elderly in England and Wales 1979–2001. *Int J Geriatr Psych* 2005;**20**(2):175–81.
21. Henderson JP, Mellin C, Patel F. Suicide – a statistical analysis by age, sex and method. *J Clin Foren Med* 2005;**12**(6):305–9.
22. Gunnell D, Hawton K, Murray V, Garnier R, Bismuth C, Fagg J, et al. Use of paracetamol for suicide and non-fatal poisoning in the UK and France: are restrictions on availability justified? *J Epid Commun Health* 1997;**51**(2):175–9.
23. Hawton K. United Kingdom legislation on pack sizes of analgesics: background, rationale, and effects on suicide and deliberate self-harm. *Suicide Life Threat* 2002;**32**(3):223–9.
24. Hawton K, Simkin S, Deeks J, Cooper J, Johnston A, Waters K, et al. UK legislation on analgesic packs: before and after study of long term effect on poisonings. *BMJ Brit Med J* 2004;**329**(7474).
25. Hendin H. *Suicide in America*. New York: Norton; 1982.
26. Department of Health and Children. Report of the National Taskforce on Suicide, 1998. p. 68.
27. Foster T, Gillespie K, McClelland R. Mental disorders and suicide in Northern Ireland. *Brit J Psych* 1997;**170**(May):447–52.
28. Bhatia MS, Verma SK, Murty OP. Suicide notes: Psychological and clinical profile. *Int J Psych Med* 2006;**36**(2):163–70.
29. Peck DL. Completed suicides: correlates of choice of method. *Omega-J Death Dying* 1985–1986;**16**(4):309–23.
30. Inoue K, Tanii H, Abe S, Kaiya H, Nata M, Fukunaga T. The correlation between rates of unemployment and suicide rates in Japan between 1985 and 2002. *Int Med J* 2006;**13**(4):261–3.
31. Cheng HF, Lester D. The economy and suicide in Japan, 1985–2000. *Percept Mot Skills* 2006;**102**(2):338.
32. Gunnell D, Lopatatzidis A, Dorling D, Wehner H, Southall H, Frankel S. Suicide and unemployment in young people: analysis of trends in England and Wales, 1921–1995. *Brit J Psych* 1999;**175**(Sep): 263–70.
33. Bradvik L. The occurrence of suicide in severe depression related to the months of the year and the days of the week. *Eur Arch Psych Clin Neurosci* 2002;**252**(1):28–32.
34. Pirkola S, Isomatsa E, Heikkinen M, Lonnqvist J. Employment status influences the weekly patterns of suicide among alcohol misusers. *Alcohol Clin Exp Res* 1997;**21**(9):1704–6.
35. Weinberg I, Lubin G, Shmushkevich M, Kaplan Z. Elevated suicide rates on the first workday: a replication in Israel. *Death Stud* 2002;**26**(8):681–8.
36. Kalediene R, Starkuviene S, Petrauskiene J. Seasonal patterns of suicides over the period of socio-economic transition in Lithuania. *BMC Pub Health* 2006;**6**:40.
37. Preti A, Miotto P, Coppi M. Season and suicide: Recent findings from Italy. *Crisis J Crisis Interv Suicide Prev* 2000;**21**(2):59–70.
38. DHSSPS. Stress, Mental Health and Suicide: MEN, 2004.
39. Joiner T. *Why People Die by Suicide*. America: Harvard University Press; 2006.